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Historia Mathematica 39 (2012) 480–503
HISTORIA MATHEMATICA
www.elsevier.com/locate/yhmat

Abstracts

Duncan J. Melville, *Editor*
Laura Martini and Kim Plofker, *Assistant Editors*

The purpose of this department is to give sufficient information about the subject matter of each publication to enable users to decide whether to read it. It is our intention to cover all books, articles, and other materials in the field.

Books for abstracting and eventual review should be sent to this department. Materials should be sent to Duncan J. Melville, Department of Mathematics, Computer Science and Statistics, St. Lawrence University, Canton, NY 13617, U.S.A. (e-mail: dmelville@stlawu.edu)

Readers are invited to send reprints, autoabstracts, corrections, additions, and notices of publications that have been overlooked. Be sure to include complete bibliographic information, as well as transliteration and translation for non-European languages. We need volunteers willing to cover one or more journals for this department.

In order to facilitate reference and indexing, entries are given abstract numbers which appear at the end following the symbol #. A triple numbering system is used: the first number indicates the volume, the second the issue number, and the third the sequential number within that issue. For example, the abstracts for Volume 30, Number 1, are numbered: 30.1.1, 30.1.2, 30.1.3, etc.

The initials in parentheses at the end of an entry indicate the abstractor. In this issue there are abstracts by Francine Abeles (Union, NJ), Joe Albree (Montgomery, AL), Larry D'Antonio (Mahwah, NJ), Patti Wilger Hunter (Santa Barbara, CA), Laura Martini, Kim Plofker, and Duncan J. Melville.

General

Bernhard, Peter; and Peckhaus, Volker, eds. *Methodisches Denken im Kontext. Festschrift für Christian Thiel. Mit einem unveröffentlichten Brief Gottlob Freges* [*Methodical Thinking in Context. Festschrift for Christian Thiel. With an Unpublished Letter of Gottlob Frege*]. Paderborn: Mentis Verlag, 2008, 471 pp. The papers in this volume dealing with history of mathematics are listed or abstracted separately as #39.4.10; #39.4.22; #39.4.34; #39.4.74; #39.4.78; #39.4.94; #39.4.95; #39.4.113; #39.4.117; and #39.4.132. (KP) #39.4.1

Bhatia, Rajendra; Pal, Arup; Rangarajan, G.; Srinivas, V.; and Vanninathan, M., eds. *Proceedings of the International Congress of Mathematicians. Held in Hyderabad, August 19–27, 2010*. New Delhi: Hindustan Book Agency, 2010, 4 vols. The descriptions of the

0315-0860/$ - see front matter
doi:10.1016/j.hm.2012.07.003

work of the prize winners, and the papers with historical content are listed or abstracted separately as: #39.4.23; #39.4.93; #39.4.102; #39.4.108; #39.4.111; #39.4.120; #39.4.122; #39.4.124; #39.4.126; and #39.4.162. (DJM) #39.4.2

Chin-Drian, Yannick. *See* #39.4.11.

Clements, M.A. (Ken). *See* #39.4.5.

Debnath, Lokenath. A brief historical introduction to Euler's formula for polyhedra, topology, graph theory and networks. *International Journal of Mathematical Education in Science and Technology* **41**(6) (2010), 769–785. In this survey, graphs and networks are shown to be "powerful tools" in the analysis of a wide range of settings, from physical systems to combinatorial problems. (JA) #39.4.3

Debnath, Lokenath. A short history of the Fibonacci and golden numbers with their applications. *International Journal of Mathematical Education in Science and Technology* **42** (3) (2011), 337–367. This article presents a brief history of Fibonacci's life and career, including his major mathematical discoveries. Special attention is given to the Fibonacci numbers, the golden number and the Lucas numbers and their fundamental properties with examples. (LM) #39.4.4

Djebbar, Ahmed. *See* #39.4.7.

Ellerton, Nerida; and Clements, M.A. (Ken). *Rewriting the History of School Mathematics in North America 1607–1861. The Central Role of Cyphering Books*. New York: Springer, 2012, xvii+223 pp. The authors argue that before about 1840 students in the United States studied mathematics by carefully learning how to solve problems and then entering the final results in "cyphering" books. The two decades from 1840 saw a rapid transition to whole-class teaching from the front of the classroom. (DJM) #39.4.5

Feintuch, Avraham; and Francis, Bruce. An infinite string of ants and Borel's method of summability. *The Mathematical Intelligencer* **34** (2) (2012), 15–18. The authors discuss and prove theorems on the conditions for convergence of a string of countably infinitely many ants in the plane. In the convergent case they invoke E. Borel's method of summability and give a modern proof of it. In the divergent case where the sequence of ants has a Cesàro sum, due to Ernesto Cesàro (1859–1906), they prove a result using a theorem of G.H. Hardy. One of the open questions they ask is, does there exist a bounded sequence that is Borel summable, but not Cesàro summable? (FA) #39.4.6

Francis, Bruce. *See* #39.4.6.

Gerdes, Paulus; and Djebbar, Ahmed. *History of Mathematics in Africa: AMUCHMA 25 years. Vol. 1: 1986–1999. Vol. 2: 2000–2011*. Morrisville, NC: Lulu; AMUCHMA, 2011, 890 pp. This book presents the thirty-seven newsletters published by AMUCHMA (African Mathematical Union Commission on the History of Mathematics in Africa) since its birth in 1986. (LM) #39.4.7

González-Velasco, Enrique A. *Journey Through Mathematics. Creative Episodes in Its History*. New York: Springer, 2011, xii+466 pp. This work is intended to be a general history of mathematics textbook, which features original sources. The scope of this "Journey" encompasses the following six mathematical subjects: trigonometry; logarithms; complex numbers; infinite series; the calculus; and convergence. Even though the historical range is broad, from the third century BCE to the 19th century, in his extensive review, Victor

Katz refers to two other textbooks and a web site, which in his judgment, do a better job of achieving González-Velasco's admirable goal. See the review by Victor Katz in *Mathematical Reviews* 2848120 (**2012g**:01001). (JA) #39.4.8

Gustafson, Karl. *The Crossing of Heaven. Memoirs of a Mathematician*. Berlin: Springer, 2012, xvi+176 pp. This book is an autobiography of the author, consisting of 12 chapters in which he tells the story of his life and work since his childhood. See the review by Roman Murawski in *Zentralblatt MATH* 1233.01008. (LM) #39.4.9

Hoffman, Frances. *See* #39.4.16.

Inhetveen, Rüdiger. Bilder und Zeichen in der Mathematik [Pictures and signs in mathematics], in #39.4.1, pp. 403–424. Describes the basic division of signs proposed by (although here not explicitly attributed to) C.S. Peirce, which distinguishes between icons, indices and symbols. The author argues that over time the signs used in mathematics have largely changed from icons to indices and later to symbols. See the review by Michael Otte in *Mathematical Reviews* 2668223 (**2012a**:01003). (KP) #39.4.10

Krömer, Ralf; and Chin-Drian, Yannick, eds. *New Essays on Leibniz Reception In Science and Philosophy of Science 1800–2000* (Publications des Archives Henri Poincaré). Basel: Birkhäuser, 2012, xiv+278 pp. This collection of essays arose out of a conference in 2008 on the reception of Leibniz' ideas and philosophy. The individual essays are listed or abstracted separately as: #39.4.80; #39.4.88; #39.4.96; #39.4.97; #39.4.99; #39.4.103; #39.4.105; #39.4.109; #39.4.114; #39.4.141; #39.4.146; and #39.4.150. (DJM) #39.4.11

Laks, André; and Narcy, Michel, eds. *Philosophie et mathématiques* [*Philosophy and Mathematics*] (*Philosophie Antique* [*Antique Philosophy*] **10**). Villeneuve d'Ascq: Presses Universitaires du Septentrion, 2010, 303 pp. Some of the 17 papers in this volume are abstracted separately as #39.4.32; #39.4.35; #39.4.38; #39.4.39; and #39.4.41. (KP) #39.4.12

Lin, Minghua. The AM—GM inequality and CBS inequality are equivalent. *The Mathematical Intelligencer* **34** (2) (2012), 6. A short proof of the arithmetic mean–geometric mean inequality and the Cauchy–Bunyakovsky–Schwarz inequality. (See also the short proof by L. Maligranda of the AM-GM inequality and the Bernoulli inequality in *The Mathematical Intelligencer* **34** (1) (2012), 1–2). (FA) #39.4.13

Mann, Tony. From prehistoric balls to contemporary fiction: What the history of mathematics has done for me. *British Society for the History of Mathematics Bulletin* **27** (2) (2012), 73–81. Based on author's 2011 Presidential address to the British Society for the History of Mathematics. Author describes the origin of some of his interests in the history of mathematics, including interest in prehistoric Scottish relics showing the symmetries of Platonic solids, William Burnside, some inaugural Gresham lectures, and mathematics in Victorian Scotland. (PWH) #39.4.14

Murawski, Roman. *Essays in the Philosophy and History of Logic and Mathematics* (*Poznań Studies in the Philosophy of the Sciences and the Humanities* **98**). With a foreword by Jan Woleński. Amsterdam: Editions Rodopi B.V., 2010, 343 pp. A selection of the author's papers, some of them previously unpublished, divided into those concerned with the philosophy of mathematics and those on the history of logic and mathematics. The papers of most interest for history of mathematics are listed or abstracted separately as: #39.4.82;

#39.4.83; #39.4.84; #39.4.85; #39.4.129; #39.4.130; and #39.4.131. See the review by Branislav Boričić in *Mathematical Reviews* 2723453 (**2011m**:03016). (DJM) #39.4.15

Narcy, Michel. *See* #39.4.12.

Pal, Arup. *See* #39.4.2.

Peckhaus, Volker. *See* #39.4.1.

Rangarajan, G. *See* #39.4.2.

Riehm, Elaine McKinnon; and Hoffman, Frances. *Turbulent Times in Mathematics. The Life of J.C. Fields and the History of the Fields Medal.* Providence, RI: American Mathematical Society; Toronto, ON: Fields Institute for Research in Mathematical Sciences, 2011, xii+257 pp. This book is about the life of the Canadian mathematician John Charles Fields (1863–1932)—remembered through the Fields Medals and for the Fields Institute in Toronto—and presents a history of the Fields Medal. It also describes how the medal was made and gives a short biography of all the Fields Medallists through 2010. See the review by Jeremy Gray in *Mathematical Reviews* 2850575 (**2012g**:01018). (LM) #39.4.16

Sakellariou, Vassilis. Restoring continuity in theory change: The Kepler-to-Newton case. *Journal for General Philosophy of Science* **42** (1) (2011), 109–127. The author argues that the discovery of Kepler's first two laws and the transition to Newtonian mechanics provides a notable case to exhibit the divide et impera move, proposed by Psillos and shows that Kepler himself employs a variant of this move. (LM) #39.4.17

Srinavas, V. *See* #39.4.2.

Vanninathan, M. *See* #39.4.2.

Wardhaugh, Benjamin. *How to Read Historical Mathematics.* Princeton and Oxford: Princeton University Press, 2010, 113 pp. The book contains short chapters, each focussed on introducing beginners to one aspect of engaging with historical texts. That all the examples are mathematical is more a reflection of the subject-oriented approach to teaching history of mathematics than a methodological issue. See the review by Patti W. Hunter in *Historia Mathematica* **39** (2) (2012), 232–233. (DJM) #39.4.18

Wess, Jane. Avoiding arithmetic, or the material culture of not learning mathematics. *British Society for the History of Mathematics Bulletin* **27** (2) (2012), 82–106. Describes counting, calculating, and record-keeping instruments in the collection of the Science Museum (London). Instruments date from the 15th through the 20th centuries. Includes photographs, explanations of their use and assessment of their popularity and success. Also explores the historical context of debates about the value and impact of such tools. (PWH) #39.4.19

Mesopotamia

Gonçalves, Carlos H.B. Analytical thinking in Mesopotamian mathematics, in *Proceedings of the 3rd International Conference of the European Society for the History of Science, 2008, Austria* (Vienna: Verlag der Österreichischen Akademie der Wissenschaften, 2008), pp. 35–42. The author sees traces of analytic (as opposed to synthetic) reasoning in the taking as given of a not yet available object, citing as examples geometric reasoning in several

Old Babylonian mathematical tablets. In the examples he sees the scribe as having "mental anticipation" of values that will be determined later. (DJM) #39.4.20

Vukosavovic, Filip. Jerusalem and Schøyen multiplication tablets. *Revue d'assyriologie et d'archéologie orientale* **104** (1) (2010), 41–44. Featuring two new multiplication tablets, both with principal number 3, one from Jerusalem and the other from the Schøyen collection. (DJM) #39.4.21

See also #39.4.61.

India

Lorenz, Kuno. Logisches Denken im alten Indien [Logical thinking in ancient India], in #39.4.1, pp. 31–42. Although this article discusses ancient Indian approaches to logic mostly in the context of Indian philosophy, some connections to mathematical logic are occasionally invoked. See the review by Leon Harkleroad in *Mathematical Reviews* 2668210. (KP) #39.4.22

Plofker, Kim. "Indian" rules, "Yavana" rules: Foreign identity and the transmission of mathematics, in #39.4.2, pp. 433–448. The author explores the transmission of mathematics between cultures, principally into and out of India, noting both the actual mathematics that traveled in either direction, and also how the transmission was understood by the receiving culture. See the review by T. Thrivikraman in *Zentralblatt MATH* 1229.01085. (DJM) #39.4.23

Islamic/Islamicate

Decorps-Foulquier, Micheline. *See* #39.4.25.

Federspiel, Michel. *See* #39.4.25.

Harbili, Anissa. Les procédés d'approximation dans les ouvrages mathématiques de l'occident musulman [Approximation processes in the mathematical works of Muslims in the West]. *Llull* **34** (73) (2011), 39–60. Approximation methods, including square and cube roots, are examined in the work of Western Islamic mathematicians. Islamic mathematicians such as Ibn 'Abdūn, al-Ḥaṣṣār, Ibn Mun'im, Ibn al-Yāsamīn, and Ibn al-Bannā are discussed. See the review by Benno van Dalen in *Zentralblatt MATH* 1232.01003. (LD) #39.4.24

Rashed, Roshdi; Decorps-Foulquier, Micheline; and Federspiel, Michel, eds. *Apollonius de Perge. Coniques. Tome 1.1: Livre I: Commentaire historique et mathématique, édition et traduction du texte arabe. Tome 1.2: Livre I: Édition et traduction du texte grec* [*Apollonius of Perga. Conics. Volume 1.1: Book I: Historical and Mathematical Commentary, Edition and Translation of Arabic Text. Volume 1.2: Book I: Edition and Translation of Greek Text*] (*Scientia Graeco-Arabica* **1.1.1, 1.1.2**). Berlin: Walter de Gruyter, 2008, vol. 1.1: xiv+664 pp., vol. 1.2: lxxiv+275 pp. This publication, together with its companion volumes listed separately as #39.4.26, #39.4.27, #39.4.28, #39.4.29, and #39.4.33, comprises editions and French translations of both Greek and Arabic versions of the seminal *Conics* of Apollonius. Only the first four or "elementary" books of the original eight survive in Greek, in a recension due to Eutocius around the fifth century CE; they are edited and translated by Dec-

orps-Foulquier and Federspiel. The seven books extant in the Arabic tradition are edited and translated by Rashed, with particular reliance on the (possibly heavily redacted) copy by Ibn al-Haytham. Rashed also supplies a commentary including explanations of the text in modern mathematical terms; the diagrams by Françoise Rashed are in modern form too. See the review by Victor V. Pambuccian in *Zentralblatt MATH* 05968963, which also encompasses the companion volumes, and the essay review by Nathan Sidoli referenced therein (*Isis* **102** (2011), 537–542). (KP) #39.4.25

Rashed, Roshdi, ed. *Apollonius de Perge. Coniques. Tome 2.1: Livres II et III: Commentaire historique et mathématique, édition et traduction du texte arabe* [*Apollonius of Perga. Conics. Volume 2.1: Books II and III: Historical and Mathematical Commentary, Edition and Translation of Arabic Text*] (*Scientia Graeco-Arabica* **1.2.1**). Berlin: Walter de Gruyter, 2010, xiv+682 pp. (KP) #39.4.26

Rashed, Roshdi, ed. *Apollonius de Perge. Coniques. Tome 2.2: Livre IV: Commentaire historique et mathématique, édition et traduction du texte arabe* [*Apollonius of Perga. Conics. Volume 2.2: Book IV: Historical and Mathematical Commentary, Edition and Translation of Arabic Text*] (*Scientia Graeco-Arabica* **1.2.2**). Berlin: Walter de Gruyter, 2009, x+319 pp. (KP) #39.4.27

Rashed, Roshdi, ed. *Apollonius de Perge. Coniques. Tome 3: Livre V: Commentaire historique et mathématique, édition et traduction du texte arabe* [*Apollonius of Perga. Conics. Volume 3: Book V: Historical and Mathematical Commentary, Edition and Translation of Arabic Text*] (*Scientia Graeco-Arabica* **1.3**). Berlin: Walter de Gruyter, 2008, x+550 pp. (KP) #39.4.28

Rashed, Roshdi, ed. *Apollonius de Perge. Coniques. Tome 4: Livres VI et VII: Commentaire historique et mathématique, édition et traduction du texte arabe* [*Apollonius of Perga. Conics. Volume 4: Books VI and VII: Historical and Mathematical Commentary, Edition and Translation of Arabic Text*] (*Scientia Graeco-Arabica* **1.4**). Berlin: Walter de Gruyter, 2009, xi+572 pp. (KP) #39.4.29

Yazdi, Hamid-Reza Giahi. Al-Khwārizmī and annular solar eclipse. *Archive for History of Exact Sciences* **65** (5) (2011), 499–517; erratum ibid. **65** (5) (2011), 589. The author considers listings of solar eclipses in an astronomical handbook of al-Khwārizmī. The handbook only survives in a 12th century translation by Adelard of Bath of a recension prepared by Maslama al-Majrīṭī. See the review by Benno van Dalen in *Zentralblatt MATH* 1232.01004. (LD) #39.4.30

See also #39.4.33; and #39.4.61.

Other Non-Western

Constantino, Antonieta. SANGAKU: The Edo period, in Silva, Jorge Nuno, ed., *Proceedings of the Recreational Mathematics Colloquium I, University of Évora, Portugal, April 29–May 2, 2009* (Lisboa: Associação Ludus, 2010), pp. 59–67. This article discusses one aspect of the Japanese mathematical tradition *Sangaku*, wooden tablets with unsolved—mainly geometric—problems found in Japanese temples. See the review by Andrea Bréard in *Zentralblatt MATH* 1233.01002. (LM) #39.4.31

Antiquity

Bellosta, Hélène. *See* #39.4.40.

Bénatouïl, Thomas; and El Murr, Dimitri. L'Académie et les géomètres: usages et limites de la géométrie de Platon à Carnéade [The Academy and geometers: Uses and limits of geometry from Plato to Carneades], in #39.4.12, pp. 41–80. Argues for a consistent institutional approach on the part of generations of philosophers in Plato's Academy to issues of geometrical foundations and the limits of geometrical reasoning. (KP) #39.4.32

Decorps-Foulquier, Micheline; and Federspiel, Michel, eds. *Apollonius de Perge. Coniques. Tome 2.3: Livres II–IV: Édition et traduction du texte grec* [*Apollonius of Perga. Conics. Volume 2.3: Books II–IV: Edition and Translation of Greek Text* (*Scientia Graeco-Arabica* **1.2.3**). Berlin: Walter de Gruyter, 2010, xxx+506 pp. (KP) #39.4.33

El Murr, Dimitri. *See* #39.4.32.

Federspiel, Michel. *See* #39.4.33.

Gatzemeier, Matthias. Der gemeinsame Ursprung der Ethik und der "Dialektik" in der "Figur" des Sokrates: Apologie und Kriton [The common origin of ethics and the dialectic in the figure of Socrates: Apology and Crito], in #39.4.1, pp. 13–29. (KP) #39.4.34

Giovacchini, Julie. L'angle et l'atome dans la physique épicurienne: réflexions sur un témoignage de Sextus Empiricus [Angles and atoms in Epicurian physics: Reflections on an argument of Sextus Empiricus], in #39.4.12, pp. 139–166. Uses an argument in Sextus' *Against geometers* to explain the rejection of geometric modeling of nature by Epicurean philosophers. (KP) #39.4.35

Hayashi, Eiji; and Saito, Ken. *Sorcerer of the Scales: Archimedes' Mathematics* [in Japanese]. Tokyo: Kyoritsu Shuppan, 2009, x+249 pp. A detailed analysis of Archimedes' *Method*, reading it as utilizing a mechanical conception of geometrical objects. The authors supplement their arguments with eight color plates and fourteen black and white photographs of models illustrating the propositions of the *Method*. See the review by Nathan Sidoli in *Historia Mathematica* **39** (2) (2012), 222–224. (DJM) #39.4.36

Jiménez, Douglas. El problema del área en los Elementos de Euclides [The area problem in Euclid's Elements]. *Boletín de la Asociación Matemática Venezolana* **17** (2) (2010), 179–207. Describes the reliance of the Hellenistic Greek approach to studying mathematical magnitude, in the absence of a concept of real number, on the comparison or proportionality of geometric figures. (KP) #39.4.37

Ofman, Salomon. Une nouvelle démonstration de l'irrationalité de racine carrée de 2 d'après les Analytiques d'Aristote [A new proof of the irrationality of the square root of 2 based on the Analytics of Aristotle], in #39.4.12, pp. 81–138. The article reconstructs classical reasoning on the irrationality of the square root of 2 in accordance with ancient knowledge of properties of odd and even numbers and brief remarks recorded by Aristotle, and relates it to a general inference that proof by contradiction was adopted from Hellenistic mathematics into philosophy rather than vice versa. See the review by Victor V. Pambuccian in *Mathematical Reviews* 2816441 (**2012g**:01005). (KP) #39.4.38

Rabouin, David; and Vitrac, Bernard. Sur le passage mathématique de l'Épinomis (900c–992a): Signification et postérité [On the mathematical part of the Epinomis (990c–

992a): Significance and legacy], in #39.4.12, pp. 5–39. The authors contend that this obscure passage in a pseudo-Platonic work is an inexpertly handled selection of "mathematical gems" from references in other works rather than esoteric theoretical knowledge, and that the attention it received was due to its relevance to the issue of the unity of mathematics. (KP) #39.4.39

Rashed, Roshdi; and Bellosta, Hélène, eds. *Apollonius de Perge, La section des droites selon des rapports. Commentaire historique et mathématique, édition et traduction du texte arabe* [*Apollonius of Perga, Cutting off of a Ratio. Historical and Mathematical Commentary, Edition and Translation of the Arabic Text*] (*Scientia Graeco-Arabica* **2**). Berlin/New York: Walter de Gruyter, 2010, viii+493 pp. Apollonius' *Cutting off of a Ratio* exists only in Arabic. Rashed and Bellosta present the first edition of the Arabic source, along with translation into French on facing pages, critical apparatus, and three introductory chapters analyzing the work. See the review by Clemency Montelle in *Aestimatio* **8** (2011) 183–187. (DJM) #39.4.40

Saito, Ken. *See* #39.4.36.

Vitrac, Bernard. *See* #39.4.39.

See also #39.4.25; #39.4.26; #39.4.27 #39.4.28; #39.4.29; #39.4.47; and #39.4.61.

Middle Ages

Guillaumin, Jean-Yves. La doctrine du nombre parfait dans une glose médiévale sur Martianus Capella [The doctrine of perfect numbers in a medieval gloss on Martianus Capella], in #39.4.12, pp. 167–184. A new study of an illustration of the classical arithmological doctrine of perfect, abundant and deficient numbers via ethics and theology in a commentary on Martianus' *Marriage of Philology and Mercury*. (KP) #39.4.41

Petakos, Kyriakos. Important mathematical concepts at the dawn of science in Byzantium: The philosopher C.M. Psellos. *Matemáticas. Enseñanza Universitaria* (NS) **18** (1) (2010), 89–97. Explores the mathematical knowledge appearing in the philosophical and other writings of the eleventh-century Byzantine scholar and statesman Constantine Michael Psellos. (KP) #39.4.42

Simonov, R.A. On the sources of mathematical (numeration) knowledge in ancient Rus: From a critique of falsifications to scientific truth [in Russian]. *Voprosy Istorii Estestvoznaniya i Tekhniki* (4) (2010), 3–25, 220. This article analyzes the two objects with numerical content found in Novgorod—a counting tally from the 10th century and a fragment of birch bark from the 13th century with an incantation that used numbers—and concludes that their prototypes are of a much more archaic origin, maybe going back to the proto-Slavic tribes of Antes of the 7th and 8th centuries who lived in the north of the Black Sea. See the review by Eberhard Knobloch in *Mathematical Reviews* 2809077 (**2012f**:01003). (LM) #39.4.43

Renaissance

Henry, John. "Mathematics made no contribution to the public weal": Why Jean Fernel (1497–1558) became a physician. *Centaurus* **53** (3) (2011), 193–220. The author studies the

career of Jean Fernel (1497–1558), showing his early commitment to mathematics, and his abandonment of the pursuit due to the perceived lack of usefulness of mathematics. He argues that Fernel should be seen not as an isolated case, but as an example of the lack of importance attached to mathematics in the pre-modern world. (DJM) #39.4.44

Trabucco, Oreste. "*L'opere stupende dell'arti più ingegnose.*" *La recezione degli Pneumatiká di Erone Alessandrino nella cultura italiana del Cinquecento* ["*The stupendous works of the most ingenious arts*". *The Reception of Hero of Alexandria's Pneumatics in the Italian Culture of the Cinquecento*]. Firenze: Olschki, 2010, 184 pp. This book focusses on the social and cultural reception and diffusion of Hero's *Pneumatics* from the early translations of Commandino and Valla, through the role of Urbino as a center for diffusion and Aleotti's translation into the vernacular, to the importance of Della Porta and Colonna in Neapolitan circles. See the review by Daniele Cozzoli in *Historia Mathematica* **39** (2) (2012), 224–226. (DJM) #39.4.45

Yamamoto, Yoshitaka. Simon Stevin and the cultural revolution in the 16th century, in Arafune, J. et al., eds., *A Garden of Quanta. Essays in Honor of Hiroshi Ezawa* (River Edge, NJ: World Scientific, 2003), pp. 491–502. This article discusses the cultural revolution that took place in the latter half of the 16th century when the vernaculars, namely, native languages began to be used as the language of scholarly communication instead of Latin. It particularly focuses on Simon Stevin as a conscious proponent of this change. (LM) #39.4.46

17th century

Claessens, Guy. Imagination as self-knowledge: Kepler on Proclus' Commentary on the first book of Euclid's Elements. *Early Science and Medicine* **16** (3) (2011), 179–199. While classical Platonism viewed imagination as a mental faculty exclusively based on sense experience, the fifth-century Neoplatonist Proclus considered it also as a medium for perceiving innate concepts including geometrical ones. The article argues that Kepler was the first early modern thinker to incorporate this Neoplatonic idea of the imagination into his philosophy. (KP) #39.4.47

Dascal, Marcelo, ed. *Leibniz: What Kind of Rationalist?* (*Logic, Epistemology, and the Unity of Science* **13**). New York: Springer, 2008, xx+532 pp. This book originates from the 20th International Workshop on the History and Philosophy of Science, held in Tel Aviv and Jerusalem on 30 May–2 June 2005. The vast majority of its 32 chapters, distributed into 8 parts, are revised versions of papers presented and discussed during that workshop. See the review by Marcel Guillaume in *Mathematical Reviews* 2759442 (**2012e**:01009). (LM) #39.4.48

Goldstein, Catherine. Pierre Fermat Poet: "Cede deo seu Christus moriens". *The Mathe matical Intelligencer* **34** (2) (2012), 1–2. The first English translation of Fermat's 102 verse Latin poem, "Yield to God, or The Dying Christ". Discussing elements leading to the writing of the poem, the author cites it as evidence that Fermat was a full participant in the development of early modern learning. (FA) #39.4.49

Markowsky, Greg. A retelling of Newton's work on Kepler's laws. *Expositiones Mathematicae* **29** (3) (2011), 253–282. This paper presents an investigation into Kepler's Laws. Newton's technique for deducing an inverse-square law from Kepler's Laws is given in a

modern presentation. Kepler's Laws are then deduced from the assumption of an inverse-square law. It also includes a problem involving planetary orbits stated and solved using the earlier results of the paper. See the review by Pierre Kerszberg in *Mathematical Reviews* 2820375 (**2012f**:01011). (LM) #39.4.50

Osler, Thomas J. Lord Brouncker's forgotten sequence of continued fractions for pi. *International Journal of Mathematical Education in Science and Technology* **41** (1) (2010), 105–110. The article identifies and analyzes an infinite sequence of related continued fractions for π discovered by William Brouncker and noted by John Wallis, but nowadays generally forgotten except for one of the continued fractions, namely "Brouncker's formula" for $\pi/4$. (KP) #39.4.51

Simoson, Andrew J. Newton's radii, Maupertuis' arc length, and Voltaire's giant. *The College Mathematics Journal* **42** (3) (2011), 183–190. The problem of how to determine the lengths of the axes of an ellipse from two arc length measurements is discussed from its treatment in Newton's work to the French geodetic expeditions of the 18th century. (KP) #39.4.52

See also #39.4.78; and #39.4.100.

18th century

Alexanderson, Gerald L. About the cover: Sophie Germain and a problem in number theory. *Bulletin of the American Mathematical Society* **49** (2) (2012), 327–331. A short summary of recent scholarship on Marie-Sophie Germain (1776–1831). The cover illustrates a brief note by Sophie Germain on an identity connecting triangular and square numbers. The note is transliterated (in French) and translated into English in the article. Perhaps the most interesting aspect of the note is Germain's notation of squares and triangles to stand for square and triangular numbers. (DJM) #39.4.53

Bellhouse, David R. *Abraham De Moivre: Setting the Stage for Classical Probability and Its Applications*. Boca Raton, FL: CRC Press, 2011, 266 pp. This book is a biography of Abraham De Moivre (1667–1754) including an account of his family's move to England from France and a detailed summary of De Moivre's work in probability. A chapter is also devoted to De Moivre's work as a private tutor. See the review by Albert C. Lewis in *Zentralblatt MATH* 1235.01020. (LM) #39.4.54

Bruneau, Olivier. D'Alembert et les mathématiques britanniques [D'Alembert and British mathematics]. *Bollettino di Storia delle Scienze Matematiche* **28** (2) (2008), 309–320. The author examines British sources for the work of d'Alembert. Of particular influence for d'Alembert is the Treatise on Fluxions by Colin MacLaurin, published in 1742. See the review by Maria Rosa Massa Esteve in *Zentralblatt MATH* 1232.01006. (LD) #39.4.55

Craik, Alex D.D. A forgotten British analyst: Nicolas Vilant (1737–1807). *Historia Mathematica* **39** (2) (2012) 174–205. http://dx.doi.org/10.1016/j.hm.2011.10.002. Nicolas Vilant was Regius Professor of Mathematics at St. Andrews University for over forty years, but, for reasons of ill-health, was unable to teach for much of that time and employed a sequence of assistants to lecture in his place. The textbook he produced for his students in 1783 and reprinted in 1798, *The Methods of Mathematical Analysis*, provides an insight into how analysis was viewed in Britain in the late 18th century. (DJM) #39.4.56

Ferret, Olivier. Les "réflexions philosophiques" dans les éloges académiques de d'Alembert: le case de l'éloge de Bossuet [The "philosophical reflexions" in d'Alembert's eulogies: The case of Bossuet's eulogy]. *Bollettino di Storia delle Scienze Matematiche* **28** (2) (2008), 255–272. D'Alembert wrote eulogies in his role as the secretary of the French Academy. To the usual content of the eulogy, d'Alembert would often add philosophical comments, promoting his Enlightenment attitudes. The author uses the eulogy of Bossuet, bishop of Meaux, as a case study. See the review by Radoslav M. Dimitrić in *Zentralblatt MATH* 1232.01007. (LD) #39.4.57

Levrie, Paul. Lost and found: An unpublished $\zeta(2)$-proof. *The Mathematical Intelligencer* **33** (2) (2011), 29–32. The author publishes a letter from Euler to Daniel Bernoulli on Euler's summation of $1/k^2$, and supplies the missing proofs of convergence that Euler "saw" but did not include. See the review by Thomas Sonar in *Zentralblatt MATH* 1233.01003. (DJM) #39.4.58

Maritz, Pieter. James Stirling: Mathematician and mine manager. *The Mathematical Intelligencer* **33** (3), 141–147. An article on the life and work of James Stirling (1692–1770), including his career as manager of a lead mine. See the review by Leon Harkleroad in *Zentralblatt MATH* 1228.01013. (DJM) #39.4.59

Reich, Karin. Ein neues Blatt in Eulers Lorbeerkranz, durch Carl Friedrich Gauss eingeflochten [A new leaf in Euler's laurel wreath, interlaced by Carl Friedrich Gauss], in Lehfeldt, Werner, ed., *Studien zur Wissenschafts- und Religionsgeschichte* (*Abhandlungen der Akademie der Wissenschaften zu Göttingen. Neue Folge* **10**) (Berlin: de Gruyter, 2011), pp. 223–274. In May 1844, Gauss sent to Paul Heinrich Fuss, son of Euler's assistant Nikolaus Fuss and secretary of the Saint-Petersburg Academy of Sciences, a manuscript copy of an article by Euler—published in a journal where nobody had looked for it—on the second proof of Euler's solution to the "Basel problem" $\sum_{n=1}^{\infty} \frac{1}{n^2}$. The recipient characterized it as "a fresh leaf in Euler's laurel wreath". The author relates this story and weaves around it another laurel wreath in honour of Gauss and Euler, telling the story of the lists of Euler's publications. See the review by Jens Høyrup in *Zentralblatt MATH* 1232.01009. (LM) #39.4.60

Steele, John M. *Ancient Astronomical Observations and the Study of the Moon's Motion (1691–1757)* (*Sources and Studies in the History of Mathematics and Physical Sciences*). New York: Springer, 2012, xiv+154 pp. Computation of the secular acceleration of the moon in the 18th century was a challenge that involved, among other things, a close study of ancient and medieval astronomical records. Steele situates the reception of the discovery of changes in the moon's motion in the wider context of how 18th century European astronomers perceived Greek, Arabic, Babylonian, and Chinese astronomy. (DJM) #39.4.61

Valdés Castro, Concepción. The legacy of Jacob Bernoulli to the science of calculus (A homage to the 300th anniversary of his death) [in Spanish]. *Revista Ciencias Matemáticas* **23** (2005–2006), 84–93 (2009). This article is a homage to the 300th anniversary of Jacob Bernoulli's death. It discusses Bernoulli's contributions to the development of differential and integral calculus and its applications to geometrical research of curves and to solve mechanical problems. (LM) #39.4.62

See also #39.4.52.

19th century

Anellis, Irving H. MacColl's influences on Peirce and Schröder. *Philosophia Scientiae* **15** (1) (2011), 97–128. This paper analyzes the influences of the Scottish logician Hugh MacColl on the work of Charles Sanders Peirce and Ernst Schröder. See the review by Teodora-Liliana Rădulescu in *Zentralblatt MATH* 1235.01005. (LD) #39.4.63

Astroh, Michael; Grattan-Guinness, Ivor; and Read, Stephen. A survey of the life of Hugh MacColl (1837–1909). *Philosophia Scientiae* **15** (1) (2011), 7–30. This paper considers the life and work of the Scottish logician Hugh MacColl. See the review by Svitlana P. Rogovchenko in *Zentralblatt MATH* 1236.01020. (LD) #39.4.64

Audin, Michèle. *Remembering Sofya Kovalevskaya.* Translated from the French by the author. Berlin: Springer, 2011, ix+284 pp. This book is devoted to Sofia Kovalevskaya. It consists of 12 chapters on her life and works: it includes also illustrations and photos. See the review by Roman Murawski in *Zentralblatt MATH* 1234.01008. (LM) #39.4.65

Bergmann, Birgit; Epple, Moritz; and Ungar, Ruti, eds. *Transcending Tradition: Jewish Mathematicians in German-speaking Academic Culture*. Berlin: Springer, 2012, xi+289 pp. This book is the English translation and extension of a German catalogue [*Jüdische Mathematiker in der deutschsprachigen akademischen Kultur*. Berlin: Springer, 2009, see Zbl 1161.01003] accompanying an exhibit which has been shown from 2006 in several major German cities. It includes 10 chapters written and individually signed by eight authors. See the review by Reinhard Siegmund-Schultze in *Zentralblatt MATH* 1234.01003. (LM) #39.4.66

Blázquez-Sanz, D. La evolución de la teora de grupos en las ecuaciones diferenciales [The evolution of group theory in differential equations]. *Lecturas Matemáticas* **29** (2) (2008), 83–93. This article surveys the evolution of group theory and its relation with the theory of algebraic and differential equations, following the path from Galois' work to the development of differential Galois theory of Emile Picard and Ernest Vessiot. (LM) #39.4.67

Bourdeau, Michel. L'idée de mathématiques appliquées chez Comte [Auguste Comte's idea of applied mathematics]. *Mathématiques et Sciences Humaines. Mathematics and Social Sciences* **193** (2011), 47–56. Featuring generous quotations from Comte himself, this paper attempts to cast Comte's philosophy of mathematics, especially as applied to physics, "in a more favorable light". See the review by Victor V. Pambuccian in *Mathematical Reviews* 2850254 (**2012g**:01017). (JA) #39.4.68

Burn, R.P. Another theorem of Cauchy which "admits exceptions". *Historia Mathematica* **39** (2) (2012), 206–210. http://dx.doi.org/10.1016/j.hm.2011.11.001. The author shows that theorem of Cauchy on limits in the *Cours d'Analyse* "admits exceptions", in Abel's phrase, because the need for uniform convergence was not recognized. The author also provides a reconstruction of the theorem. (DJM) #39.4.69

Canévet, Olivier. L'horloge astronomique de Ploërmel [The astronomical clock at Ploërmel]. *Quadrature* **72** (2009), 15–18. This article discusses the astronomical clock at Ploërmel and proposes the use of continuous fractions for calculating the number of teeth necessary in the clock's cogwheels. (LM) #39.4.70

Craik, Alex D.D. Thomas Young on fluid mechanics. *Journal of Engineering Mathematics* **67** (2010), 95–113. On the contributions of the prolific polymath Thomas Young (1773–1829) to fluid mechanics, including turbulence in jets of air, resistance in hydraulic flow, and a theory of hydraulic jump. (DJM) #39.4.71

Dolecki, S.; and Greco, G.H. Tangency vis-à-vis differentiability by Peano, Severi and Guareschi. *Journal of Convex Analysis* **18** (2) (2011), 301–339. Dedicated to the 150th anniversary of Peano's birth, this paper follows "the evolution of the concepts of differentiability, tangency and related notions" among the mathematicians of Turin University, where Peano taught. A "vast bibliography" is included. See the review by Vladimir V. Goncharov in *Mathematical Reviews* 2828489 (**2012f**:49003). (JA) #39.4.72

Epple, Moritz. *See* #39.4.66.

Fellner, Hans G.; and Lindgren, William F. Gustav Theodor Fechner: Pioneer of the fourth dimension. *The Mathematical Intelligencer* **33** (3) (2011), 126–137. The article includes translations of two articles by Gustav Theodor Fechner (1801–1887), "Der Schatten ist lebendig" ["The shadow is alive"], and "Der Raum hat vier Dimensionen" ["Space has four dimensions"]) in which he attempted to imagine four-dimensional space. See the review by Silke Göbel in *Zentralblatt MATH* 1235.01009. (DJM) #39.4.73

Gabriel, Gottfried. Wie formal ist die formale Logik? Friedrich Adolf Trendelenburg und Gottlob Frege [How formal is formal logic? Friedrich Adolf Trendelenburg and Gottlob Frege], in #39.4.1, pp. 115–131. (KP) #39.4.74

Gauss, Carl Friedrich. *Theoria motus corporum coelestium in sectionibus conicis solem ambientium* [*Theory of the Motion of the Heavenly Bodies Moving about the Sun in Conic Sections*] (Cambridge Library Collection). Cambridge: Cambridge University Press, 2011, xii+228 pp. This is a reprint of Gauss' *Theoria motus corporum coelestium in sectionibus conicis solem ambientium*, the 1809 book in Latin on theoretical astronomy. (LM) #39.4.75

Gouvêa, Fernando Q. Was Cantor surprised? *American Mathematical Monthly* **118** (3) (2011), 198–202. This paper examines the Cantor-Dedekind correspondence, 1873–1877, concerning Cantor's demonstrations of bijections between certain sets of different dimensions. The author's explanation of the title question is to interpret Cantor's famous quotation, "I see it, but I don't believe it", as Cantor's reaction to the counter-intuitive nature of these results. See the review by Bart J.I. Van Kerkhove in *Mathematical Reviews* 2800330 (**2012f**:01016). (JA) #39.4.76

Grattan-Guinness, Ivor. *See* #39.4.64.

Greco, G.H. *See* #39.4.72.

Jetli, Priyedarshi. The completion of the emergence of modern logic from Boole's *The Mathematical Analysis of Logic* to Frege's *Begriffsschrift*, in Banerjee, Mohua, and Seth, Anil, eds., *Logic and its Applications* (*Lecture Notes in Computer Science* **6521**) (Berlin: Springer, 2011), 105–123. On Frege's 1879 introduction of propositional calculus as a continuation of Boole's 1847 algebraisation of classical logic, which was still bound by sylllogisms. (DJM) #39.4.77

Legris, Javier. "In Symbolen denken". Symbolic knowledge in Frege's conceptual notation, in #39.4.1, pp. 133–153. Starting from Leibniz's formulation of symbolic knowledge,

the article traces its influence on Frege's conceptual notation and related work in the development of mathematical logic. (KP) #39.4.78

Lehfeldt, Werner. *See* #39.4.89.

Lindgren, William F. *See* #39.4.73.

Lis, José Sabina de. Poincaré y la teoria cualitativa de ecuaciones differenciales (II) [Poincaré and the qualitative theory of differential equations. II]. *Revista Ciencias Matemáticas* **22** (2) (2004), 174–198. This is the second part of an earlier article of the same name [ibid., **22** (1) (2004), 77–103]. The author considers Poincaré's study of the integration of linear equations using automorphic functions. Poincaré's work on the three-body problem is also discussed. See the review by Ubiratan D'Ambrosio in *Zentralblatt MATH* 1232.01027. (LD) #39.4.79

Luciano, Erika. Peano and his school between Leibniz and Couturat: The influence in mathematics and in international language, in #39.4.11, pp. 41–64. Using sources from Peano's recently-discovered personal library, the author establishes how and when Peano engaged with Leibniz' ideas and how these penetrated into his collaborators. (DJM) #39.4.80

Muntersbjorn, Madeline. On the intellectual heritage of Henri Poincaré. *British Society for the History of Mathematics Bulletin* **27** (2) (2012), 107–118. Outlines some of Poincaré's metaphysics and epistemology of mathematics. Traces the influence on Poincaré's philosophy of Darwinian evolution, the ideas of Ernst Mach, and the science fiction of Jules Verne, and points out contrasts with the ideas of Immanuel Kant, Bertrand Russell, and Gottlob Frege. (PWH) #39.4.81

Murawski, Roman. Hoene-Wroński—genius or madman?, in #39.4.15, pp. 149–160. A study of the life and work of notoriously unclear mathematician and philosopher Józef Maria Hoene-Wroński (1776–1853). See the review by Svitlana P. Rogovchenko in *Zentralblatt MATH* 1217.01034. (DJM) #39.4.82

Murawski, Roman. Grassmann's contribution to mathematics, in #39.4.15, pp. 161–168. On Grassman's contributions to mathematics and the causes of their neglect at the time he introduced them. See the review by Svitlana P. Rogovchenko in *Zentralblatt MATH* 1217.01016. (DJM) #39.4.83

Murawski, Roman. Giuseppe Peano and symbolic logic, in #39.4.15, pp. 169–182. A brief description of the role of Peano in the development of symbolic logic. See the review by Luigi Borzacchini in *Zentralblatt MATH* 1216.01007. (DJM) #39.4.84

Murawski, Roman. The English algebra of logic in the 19th century, in #39.4.15, pp. 245–269. Murawski considers the work of De Morgan, Boole, Jevons, and Venn as it related to the development of mathematical logic. See the review by R.W. van der Waall in *Zentralblatt MATH* 1221.01075. (DJM) #39.4.85

Neumann, Peter M. The editors and editions of the writings of Évariste Galois. *Historia Mathematica* **39** (2) (2012), 211–221. http://dx.doi.org/10.1016/j.hm.2012.01.003. The author discusses the various editions of Galois' writings since his death in 1832, considering the editorial decisions made by each successive editor and comparing the results. The choices range from simple typographic and punctuation regularization, to correcting Galois' grammar, and larger decisions of what to include, to omit, and to alter. (DJM) #39.4.86

Núñez, Juan; Prieto, Alicia; and Sánchez-Canales, Vanesa. A photographic journey through the life of Sophus Lie. *Lecturas Matemáticas* **31** (1) (2010), 55–75. This paper presents some of the less well-known photographs related to Sophus Lie's life. A review of the people and circumstances appearing in each of them is described. (LM) #39.4.87

Peckhaus, Volker. The reception of Leibniz's logic in 19th century German philosophy, in #39.4.11, pp. 13–24. #39.4.88

Prieto, Alicia. *See* #39.4.87.

Read, Stephen. *See* #39.4.64.

Reich, Karin; and Roussanova, Elena. *Carl Friedrich Gauss und Russland. Sein Briefwechsel mit in Russland wirkenden Wissenschaftlern* [*Carl Friedrich Gauss and Russia. His Correspondence with Scientists Working in Russia. In cooperation with Werner Lehfeldt*] (*Abhandlungen der Akademie der Wissenschaften zu Göttingen. Neue Folge* **16**). Berlin: de Gruyter, 2012, xxiii+905 pp. This book presents the correspondence of Carl Friedrich Gauss with scientists working in Russia. It consists of two parts: the first part contains information concerning Gauss' connections with Russia, while the second part is devoted to the correspondence of Gauss with scientists active in Russia. See the review by Roman Murawski in *Zentralblatt MATH* 1235.01033. (LM) #39.4.89

Richards, Joan L. "This compendious language": Mathematics in the world of Augustus De Morgan. *Isis* **102** (3) (2011), 506–510. The author connects the work of De Morgan to more general comments on the nature of mathematics. See the review by Leon Harkleroad in *Zentralblatt MATH* 1235.01011. (LD) #39.4.90

Riche, Jacques. Logic in Whitehead's universal algebra. *Logique et Analyse* (NS) **54** (214) (2011), 135–159. The article considers the algebra of symbolic logic presented by Whitehead in his 1898 *Treatise on Universal Algebra* and his later restatement of some of his positions on logic. (KP) #39.4.91

Roussanova, Elena. *See* #39.4.89.

Sánchez Fernández, Carlos. Abelian contributions to analysis [in Spanish]. *Revista Ciencias Matemáticas* **23** (2005–2006), 94–105 (2009). The author argues that Abel's influence was decisive in the development of the styles of thought prevalent in nineteenth-century mathematical analysis by discussing the second edition of his *Oeuvres Complètes* as well as other original and secondary sources. (LM) #39.4.92

Sánchez-Canales, Vanesa. *See* #39.4.87.

Schappacher, Norbert. Rewriting points, in #39.4.2, pp. 3258–3291. The author explores development of mathematics as a series of "rewritings", taking as an example how the notion of a point evolved during the 19th and 20th centuries. See the review by Franz Lemmermeyer in *Zentralblatt MATH* 1235.01012. (DJM) #39.4.93

Schenk, Günter. Aspekte einer topologischen Logik bei Hermann Ulrici [Aspects of a topological logic in Hermann Ulrici], in #39.4.1, pp. 87–99. Analyzes the German philosopher Ulrici's attempt to reform logic in a period of foundational crisis by providing a scientific basis for it. See the review by Bart J.I. Van Kerkhove in *Mathematical Reviews* 2668211 (**2011m**:03006). (KP) #39.4.94

Schlotter, Sven; and Wehmeier, Kai. Ein unbekannter Brief Gottlob Freges [An unknown letter by Gottlob Frege], in #39.4.1, pp. 171–176. (KP) #39.4.95

Schmid, Anne-Françoise. Couturat's reception of Leibniz, in #39.4.11, pp. 65–83. #39.4.96

Séguin, Philippe. The idea of number from Gauss to Cantor. The Leibnizian heritage and its surpassing, in #39.4.11, pp. 1–11. The author discusses the extent to which Leibnizian viewpoints affected the development of the idea of number among German mathematicians of the 19th century. (DJM) #39.4.97

Tattersall, James P. Hugh MacColl's contributions to the *Educational Times*. *Philosophia Scientiae* **15** (1) (2011), 77–96. This paper looks at the mathematical department of the *Educational Times* journal and the contributions of the Scottish mathematician Hugh MacColl to that journal. See the review by Yuri V. Rogovchenko in *Zentralblatt MATH* 1236.01031. (LD) #39.4.98

Ungar, Ruti. *See* #39.4.66.

Wehmeier, Kai. *See* #39.4.95.

Willmann, Françoise. Leibniz's metaphysics as an epistemological obstacle to the mathematization of nature: The view of a late 19th century Neo-Kantian, Kurd Lasswitz, in #39.4.11, pp. 25–39. #39.4.99

See also #39.4.10; #39.4.60; #39.4.121; #39.4.128; #39.4.140; and #39.4.143.

20th century

Alcantara, Jean-Pascal. On internal relations in Leibniz, British neo-realism and Whitehead. *Logique et Analyse* (NS) **54** (214) (2011), 173–209. From the summary: "The aim of this paper consists in asking whether Whitehead's philosophy of organism would be a reenactment of Leibniz's doctrine of internal relations." (KP) #39.4.100

Aleksandrov, A.D. *Selected Works. Vol. 3. Articles of Various Years* [in Russian]. Novosibirsk: Nauka, 2008, iv+734 pp. This volume contains two papers by Aleksandrov (on additive set functions and generalization of Riemannian geometry) not previously published in Russian, as well as selected papers on topics including philosophy of science and an index in Russian and English of the papers appearing in volumes 1–3 of this collection. See the review by Roman Murawski in *Zentralblatt MATH* 1236.01037. (KP) #39.4.101

Archibald, Raymond Clare. *See* #39.4.115.

Arthur, James. The work of Ngô Bao Châu, in #39.4.2, pp. 57–70. #39.4.102

Breger, Herbert. Chaitin, Leibniz and complexity, in #39.4.11, pp. 257–265. On Gregory Chaitin's reading of Leibniz, and his influence on Chaitin's ideas of complexity. (DJM) #39.4.103

Čap, Andreas; Feichtinger, Hans G.; Hauser, Herwig; Lamel, Bernhard; Sigmund, Karl; and Teschl, Gerald. Mathematik in Wien: Universität Wien [Mathematics in Vienna: University of Vienna]. *Internationale Mathematische Nachrichten* **214** (2010), 17–47. This article

gives a history of the mathematics department at the University of Vienna up to the present day. See the review by Hans Fischer in *Zentralblatt MATH* 1231.01009. (LD) #39.4.104

Crocco, Gabriella. Gödel, Leibniz and "Russell's Mathematical Logic", in #39.4.11, pp. 217–256. Basing her argument largely on unpublished sources, the author argues for a deep reading of Leibniz by Kurt Gödel. (DJM) #39.4.105

D'Antona, Ottavio. *See* #39.4.107.

Dale, Andrew I.; and Kotz, Samuel. *Arthur L. Bowley. A Pioneer in Modern Statistics and Economics*. Hackensack, NJ: World Scientific Publishing Co., 2011, xvi+525 pp. In books, papers and government reports, Sir Arthur Bowley (1869–1957) made major contributions to demography, econometrics, mathematics and statistics, primarily in Britain and India. This book is a "well-organized review" of Bowley's scholarly work. A very complete bibliography is also a feature. See the review by Alan D. Hutson in *Mathematical Reviews* 2807895 (**2012e**:62002). (JA) #39.4.106

Damiani, Ernesto; D'Antona, Ottavio; Marra, Vincenzo; and Palombi, Fabrizio, eds. *From Combinatorics to Philosophy. The Legacy of G.C. Rota. Including Lectures from the Rota Memorial Conference held at the Università degli Studi di Milano, Milano, February 16–18, 2009*. New York: Springer, 2009, xviii+260 pp. This book is subdivided into three parts: biographical information, including some recollections from Rota's family; eight chapters describing Rota's various mathematical contributions; and five sections relating "Rota's philosophical theses and insights". See the review by Eberhard Knobloch in *Mathematical Reviews* 2766481 (**2012f**:05009). (JA) #39.4.107

Daubechies, Ingrid. The work of Yves Meyer, in #39.4.2, pp. 115–124. #39.4.108

De Risi, Vincenzo. Leibniz on relativity. The debate between Hans Reichenbach and Dietrich Mahnke on Leibniz' theory of motion and time, in #39.4.11, pp. 143–185. #39.4.109

Doerfler, Ron; Gluchoff, Alan; Guthery, Scott; and Hamburg, Paul. *Calculating Curves: The Mathematics, History, and Aesthetic Appeal of T.H. Gronwall's Nomographic Work*. Boston: Docent Press, 2012, x+162 pp. The book contains the first translation of T.H. Gronwall's paper, "Sur les équations entre trois variables représentables par des nomogrammes à pointes alignés," from 1912, together with an essay providing historical context for the paper, an analysis of the contents of the paper and its importance for nomographic theory, as well as a bibliography of Gronwall, including unpublished work. (DJM) #39.4.110

Feichtinger, Hans G. *See* #39.4.104.

Furstenberg, Harry. The work of Elon Lindenstrauss, in #39.4.2, pp. 51–54. #39.4.111

Gluchoff, Alan. *See* #39.4.110.

Grace, John Hilton; and Young, Alfred. *The Algebra of Invariants. Reprint of the 1903 Original*. Cambridge: Cambridge University Press, 2010, ii+viii+384 pp. The original edition of this book in 1903 introduced into British mathematics pioneering German research on invariant theory, and was regarded as the standard text in this field in English. (KP) #39.4.112

Grattan-Guinness, Ivor. Set theory, symbolic logics and foundations of mathematics: Principal interests of the major figures, 1890–1940, in #39.4.1, pp. 177–183. #39.4.113

Griffin, Nicholas. Russell and Leibniz on the classification of propositions, in #39.4.11, pp. 85–127. The author discusses the background and contents of Russell's book on Leibniz. (DJM) #39.4.114

Gronwall, Thomas Hakon. *See* #39.4.110.

Guthery, Scott. *Bibliography of Raymond Clare Archibald.* Boston: Docent Press, 2012, xv+52 pp. A comprehensive bibliography of R.C. Archibald, well-known as a bibliographer himself, and a man of astonishing productivity. The bibliography includes over a thousand entries, divided up thematically as: Mathematics—General (382 items); Mathematical Tables and Other Aids to Computation (428 items); *Scripta Mathematica* (139 items), and Other (107 entries). (DJM) #39.4.115

Guthery, Scott. *See* #39.4.110.

Halimi, Brice. The versatility of universality in *Principia mathematica. History and Philosophy of Logic* **32** (3) (2011), 241–264. The article discusses Russell's claim that all propositional functions (propositions allowing variables among their constituents) can be accounted for using only predicative variables, and related issues in ramified-type theory. (KP) #39.4.116

Hamacher-Hermes, Adelheid. Frauen in der Logik—Elli Heesch [Women in logic—Elli Heesch], in #39.4.1, pp. 269–282. #39.4.117

Hamburg, Paul. *See* #39.4.110.

Handwerk, Agnes; and Willems, Harrie. *Late Style. Yuri I. Manin Looking Back on a Life in Mathematics* (*DVD-Video. Springer VideoMATH*). Berlin: Springer, 2012, DVD, 60 min. This documentary presents a portrait of Yuri Manin's life and career. See the review by Leon Harkleroad in *Zentralblatt MATH* 1235.01026. (LM) #39.4.118

Hauser, Herwig. *See* #39.4.104.

Jakimowicz, Emilia; and Miranowicz, Adam, eds. *Stefan Banach: Remarkable Life, Brilliant Mathematics. Biographical materials.* 3rd ed. Gdańsk: Gdańsk University Press; Providence, RI: American Mathematical Society (AMS)/distributor, 2011, xiii+185 pp. This book contains new material about Stefan Banach's biography collected by various authors. It includes two chapters with letters to and from Banach and personal collections about him and his father as well as contemporary photographs, many of them from family collections, documents and facsimiles of letters. See the review by Dirk Werner in *Zentralblatt MATH* 1236.01023. (LM) #39.4.119

Kalai, Gil. The work of Daniel A. Spielman, in #39.4.2, pp. 101–112. #39.4.120

Kelly, Susan E.; and Rozner, Sarah A. Winifred Edgerton Merrill: "She Opened The Door". *Notices of the American Mathematical Society* **59** (4) (2012), 504–512. A biographical article on Winifred Edgerton Merrill (1862–1951), who was the first American woman to be awarded a Ph.D. in mathematics (from Columbia University in 1886), gave up mathematics to raise a family, and then founded and ran schools for women. (DJM) #39.4.121

Kesten, Harry. The work of Stanislav Smirnov, in #39.4.2, pp. 73–84. #39.4.122

Khesin, Boris; and Tabachnikov, Serge, eds. Memories of Vladimir Arnold. *Notices of the American Mathematical Society* **59** (4) (2012), 482–502. This memorial article on Arnold and his mathematics includes contributions from Dmitry Fuchs, Yakov Eliashberg, Yulij Ilyashenko, Boris Khesin, Victor Vassiliev, and Helmut Hofer. (DJM) #39.4.123

Kjeldsen, Tinne Hoff. History of convexity and mathematical programming: Connections and relationships in two episodes of research in pure and applied mathematics of the 20th century, in #39.4.2, pp. 3233–3257. The author uses the introduction of the notion of a general convex body as an example of the trend towards abstraction in 20th century mathematics, while on the other hand she shows that the development of mathematical programming was an example of the emergence of new areas of applied mathematics. She argues for a closer commingling of "pure" and "applied" mathematics than is usually held to exist. See the review by Jean-Paul Pier in *Zentralblatt MATH* 1230.01023. (DJM) #39.4.124

Kotz, Samuel. *See* #39.4.106.

Lamel, Bernhard. *See* #39.4.104.

Lehmann, Erich L. *Fisher, Neyman, and the Creation of Classical Statistics*. New York: Springer, 2011, viii+115 pp. "The book provides a survey of scientific developments in the first half of the twentieth century that have laid the foundations of parametric mathematical and applied statistics". See the review by Thorsten Dickhaus in *Mathematical Reviews* 2798202 (**2012f**:62004). (JA) #39.4.125

Li, YanYan. The work of Louis Nirenberg, in #39.4.2, pp. 127–137. #39.4.126

Marchisotto, Elena Anne Corie. Mario Pieri: l'Uomo, il Matematico, il Docente [Mario Pieri: Man, mathematician, teacher]. *La Matematica nella Società e nella Cultura. Serie I. Rivista della Unione Matematica Italiana* **3** (3) (2010), 321–364. This paper considers the life and work of Italian geometer Mario Pieri. See the review by Luigi Borzacchini in *Zentralblatt MATH* 1232.01010. (LD) #39.4.127

Marra, Vincenzo. *See* #39.4.107.

Menghini, Marta. La geometria intuitiva nella scuola media italiana del '900 [Intuitive geometry in Italian middle schools of the 20th century]. *La Matematica nella Società e nella Cultura. Serie I. Rivista della Unione Matematica Italiana* **3** (3) (2010), 399–429. A survey of the mathematical education of 11-14 year olds in Italian schools in the late 19th century and the 20th century up to the 1960s. The author looks at educational philosophy, particularly the idea of "intuitive geometry", didactics, and textbooks. See the review by R.W. van der Waall in *Zentralblatt MATH* 1235.01018. (DJM) #39.4.128

Miranowicz, Adam. *See* #39.4.119.

Murawski, Roman. John von Neumann and Hilbert's school, in #39.4.15, pp. 195–209. On John von Neumann's contributions to the axiomatization of set theory and his role in supporting Hilbert's goal of proving the consistency of mathematics up to Gödel's incompleteness announcement at the Königsberg conference in 1930. See the review by Jim Mackenzie in *Zentralblatt MATH* 1223.01017. (DJM) #39.4.129

Murawski, Roman. Contributions of Polish logicians to decidability theory, in #39.4.15, pp. 211–231. This previously published paper is on the role of Polish logicians to the devel-

opment of decidability with focus on completeness, undecidability, satisfiability and extensions of incompleteness. See the review by E. Mendelson in *Mathematical Reviews* 1370863 (**96k**:03006). (DJM) #39.4.130

Murawski, Roman. Contribution of Polish logicians to predicate calculus, in #39.4.15, pp. 233–243. A previously unpublished paper on the contributions of Polish logicians to the development of predicate calculus up to the 1960s. (DJM) #39.4.131

Murawski, Roman; and Pogonowski, Jerzyr. Logical investigations at the University of Poznań in 1945–1955, in #39.4.1, pp. 239–253. #39.4.132

Neunzert, Helmut. *See* #39.4.158.

Ockenfels, Axel; and Sadrieh, Abdolkarim, eds. *The Selten School of Behavioral Economics. A Collection of Essays in Honor of Reinhard Selten*. Berlin: Springer-Verlag, 2010, xvi+295 pp. A Festschrift in honor of the Nobel Prize-winning economist Reinhard Selten on the occasion of his 80th birthday. The papers range from technical contributions on behavioral economics to personal recollections of working with Selten. (DJM) #39.4.133

Ortiz, Eduardo L. Julio Rey Pastor, su posición en la escuela matemática argentina [Julio Rey Pastor, his position in the Argentinian mathematical school]. *Revista de la Unión Matemática Argentina* **52** (1) (2011), 149–194, electronic only. The article looks at the life and work of the mathematician Julio Rey Pastor (1888–1962), who was born in Spain but moved to Argentina in 1920. See the review by V.N. Saliĭ in *Zentralblatt MATH* 1231.01007. (LD) #39.4.134

Pajot, Hervé. Yves Meyer et l'opérateur de Cauchy [Yves Meyer and the Cauchy operator]. *Gazette des Mathématiciens* **128** (2011), 15–33. In honor of the award of the 2010 Gauss Prize to Yves Meyer, this paper features three different proofs of the L_2 continuity of the Cauchy integral operator on Lipschitz graphs. See the review by Guiseppe Di Fazio in *Mathematical Reviews* 2828327 (**2012g**:47140). (JA) #39.4.135

Palombi, Fabrizio. *The Star and the Whole. Gian-Carlo Rota on Mathematics and Phenomenology*. Boca Raton, FL: CRC Press, 2011, xiv+124 pp. Translated from the second revised Italian edition of the 2003 original by Giacomo Donis. With a forward by Robert Sokolowski. As a philosopher, Rota "remained in the phenomenological-existential tradition", he was mainly influenced by Husserl and Heidegger, and he held an "openly negative attitude towards analytic philosophy". The author explains in detail how Rota used "classical philosophical thought in his analysis of mathematics and of its relation with objectivism". A complete list of Rota's publications is included. See the review by Peeter Müüsepp in *Mathematical Reviews* 2827685 (**2012e**:00005). (JA) #39.4.136

Palombi, Fabrizio. *See* #39.4.107.

Pambuccian, Victor. On a paper of Dan Barbilian. *Note di Matematica* **29** (2) (2009), 29–31. The paper referred to appeared in the *Bulletin Mathématique de la Société des Sciences Mathématiques de Roumanie* **38** (1936), 3–62. This work dealt with certain implications of the axioms in David Hilbert's *Grundlagen der Geometrie* (first published in 1899). See the review by Hellmuth Stachel in *Mathematical Reviews* 2789832 (**2012e**:51019). (JA) #39.4.137

Parks, Harold, ed. Remembering Herbert Federer (1920–2010). *Notices of the American Mathematical Society* **59** (5) (2012), 622–631. A memorial tribute to geometric analyst Herbert Federer, best known as the author of *Geometric Mesaure Theory*, with contributions by Leslie Vaaler, John Wermer, William Allard, Robert Hardt, William P. Ziemer, and Wendell Fleming. (DJM) #39.4.138

Pelayo, Álvaro. Operadores integrales de Fourier, teoría espectral y sistemas hamiltonianos [Fourier integral operators, spectral theory and Hamiltonian systems]. *La Gaceta de la Real Sociedad Matemática Española* **14** (2) (2011), 247–262. The author gives an overview of the work of the Dutch mathematician J.J. Duistermaat (1942–2010). See the review by R.W. van der Waall in *Zentralblatt MATH* 1235.01031. (LD) #39.4.139

Pietarinen, Ahti-Veikko. Existential graphs: What a diagrammatic logic of cognition might look like. *History and Philosophy of Logic* **32** (3) (2011), 265–281. The logician C.S. Peirce devised a diagrammatic notation called "existential graphs" to represent concepts in the predicate calculus. This article explores its reception during the emergence of modern ideas of symbolic logic and its contributions to modern logical theory. (KP) #39.4.140

Pogonowski, Jerzyr. *See* #39.4.132.

Rabouin, David. Interpretations of Leibniz's *Mathesis Universalis* at the beginning of the XXth century, in #39.4.11, pp. 187–201. #39.4.141

Richard, Sébastien. Whitehead's mereotopology and the project of formal ontology. *Logique et Analyse* (NS) **54** (214) (2011), 249–285. Traces the evolution of mereology or the theory of relations between wholes and parts in Whitehead's philosophy, particularly its incorporation of topological concepts to create the formalistic "mereotopology" on which his ontology was based. (KP) #39.4.142

Rozner, Sarah A. *See* #39.4.121.

Sadrieh, Abdolkarim. *See* #39.4.133.

de Saint-Gervais, Henri Paul. *Uniformisation des surfaces de Riemann. Retour sur un théorème centenaire* [*Uniformization of Riemann Surfaces. A Look Back at a 100-year-old Theorem*]. Lyon: ENS Éditions, 2010, 544 pp. This composite author represents collaboration by Aurélien Alvarez, Christophe Bavard, François Béguin, Nicolas Bergeron, Maxime Bourrigan, Bertrand Deroin, Sorin Dumitrescu, Charles Frances, Étienne Ghys, Antonin Guilloux, Frank Loray, Patrick Popescu-Pampu, Pierre Py, Bruno Sévennec, and Jean-Claude Sikorav. His given names commemorate Henri Poincaré and Paul Köbe, whose simultaneous proofs in 1907 of the uniformization theorem are at the core of this study of the theorem, its mathematical forerunners including work by Riemann, Clebsch, and Schwarz, and its impact on mathematics. See the review by Athanase Papadopoulos in *Mathematical Reviews* 2768303 (**2012d**:30107). (KP) #39.4.143

Scharlau, Winfried. *Wer ist Alexander Grothendieck? Anarchie, Mathematik, Spiritualität, Einsamkeit. Eine Biographie. Teil 3: Spiritualität.* [*Who is Alexander Grothendieck? Anarchy, Mathematics, Spirituality, Solitude. A Biography. Part 3: Spirituality*]. Norderstedt: Books on Demand, 2010, 263 pp. This is volume 3 of a 4-volume project on Alexander Grothendieck's life and works, covering the period from 1970 to 1991. See the review by Dirk Werner in *Zentralblatt MATH* 1234.01007. (LM) #39.4.144

Schneider, Martina R. *Zwischen zwei Disziplinen. B.L. van der Waerden und die Entwicklung der Quantenmechanik* [*Between Two Disciplines. B.L. van der Waerden and the Development of Quantum Mechanics*] (*Mathematik im Kontext*). Berlin: Springer, 2011, xvi+411 pp. The author investigates van der Waerden's contributions to the development of quantum mechanics, analyzing van der Waerden's relation with physics in general and his corresponding papers. See the review by Rüdiger Thiele in *Zentralblatt MATH* 1233.01009. (LM) #39.4.145

Scholz, Erhard. Leibnizian traces in H. Weyl's *Philosophie der Mathematik und Naturwissenschaft*, in #39.4.11, pp. 203–216. #39.4.146

Schwartz, Laurent. *Œuvres scientifiques. I* [*Scientific papers. I*] (*Documents Mathématiques (Paris)* **9**). Paris: Société Mathématique de France, 2011, x+523 pp. This is volume I of the collected works of Laurent Schwartz that the Société Mathématique de France has now published in three volumes. This volume includes Schwartz's articles from the period from 1944 until 1954 and ends with a list of publications of Schwartz. See the review by Franz Lemmermeyer in *Zentralblatt MATH* 1236.01038. (LM) #39.4.147

Schwartz, Laurent. *Œuvres scientifiques. II* [*Scientific papers. II*] (*Documents Mathématiques (Paris)* **10**). Paris: Société Mathématique de France, 2011, x+507 pp. Volume II of the collected works of Laurent Schwartz covers the second half of his papers in analysis and partial differential equations written in the period from 1954 until 1966, including exposés from the Séminaire Schwartz 1954/55 and 1955/56. See the review by Franz Lemmermeyer in *Zentralblatt MATH* 1235.01039. (LM) #39.4.148

Schwartz, Laurent. *Œuvres scientifiques. III* [*Scientific papers. III*] (*Documents Mathématiques (Paris)* **11**). Paris: Société Mathématique de France, 2011, x+619 pp. Volume III of the collected works of Laurent Schwartz consists of three parts: articles on Banach spaces with an introduction by Gilles Godefroy; on probability with an introduction by Michel Émery, and the rest, mainly of historical nature. See the review by Franz Lemmermeyer in *Zentralblatt MATH* 1235.01040. (LM) #39.4.149

Seidengart, Jean. Cassirer, reader, publisher, and interpreter of Leibniz's philosophy, in #39.4.11, pp. 129–142. #39.4.150

Siegmund-Schultze, Reinhard. Hans Wußing (1927–2011) and the blooming of the history of mathematics and sciences in the German Democratic Republic—A biographical essay. *Historia Mathematica* **39** (2) (2012), 143–173. http://dx.doi.org/10.1016/j.hm.2012.01.004. An extended obituary for noted historian Hans Wußing exploring the institutional and political framework of his times including commentary on recent developments since the unification of Germany. (DJM) #39.4.151

Sigmund, Karl. *See* #39.4.104.

Sinai, Yakov G. *Selecta. Volume I. Ergodic Theory and Dynamical Systems*. New York: Springer, 2010, xvi+496 pp. This volume of the selected works of Yakov G. Sinai brings together 19 of his papers on ergodic theory spanning several decades. The papers were selected by the author and he contributes a commentary on each one. See the review by Nikolai Chernov in *Mathematical Reviews* 2766434 (**2012e**:01011). (DJM) #39.4.152

Sinai, Yakov G. *Selecta. Volume II. Probability Theory, Statistical Mechanics, Mathematical Physics and Mathematical Fluid Dynamics*. New York: Springer, 2010, xxii+514 pp. The second volume of selected articles by Yakov Sinai contains 22 papers on statistical

mechanics and related topics originally published between 1972 and 2008. As in the first volume, the author provides a commentary on each paper. See the review by Nikolai Chernov in *Mathematical Reviews* 2766435 (**2012e**:01012). (DJM) #39.4.153

Solomyak, M.Z.; Suslina, T.A.; and Yafaev, T.R. On the mathematical work of M. Sh. Birman. *St. Petersburg Mathematical Journal* **23** (1) (2012), 1–38. This paper examines the mathematics of the Russian mathematician Mikhail Shlemovich Birman (1928–2009), particularly his work in the spectral theory of operators. The Russian original of this paper appeared in *Algebra i Analiz* **23** (1) (2011), 5–60. See the review by Franz Lemmermeyer in *Zentralblatt MATH* 1236.01029. (LD) #39.4.154

Stadler, Friedrich. The road to *Experience and Prediction* from within: Hans Reichenbach's scientific correspondence from Berlin to Istanbul. *Synthese* **181** (1) (2011), 137–155. The author analyzes Hans Reichenbach's scientific correspondence to discuss the controversy between the groups of the proponents of the emerging logical empiricism in Berlin, Vienna and eventually in Istanbul. (LM) #39.4.155

Staley, Richard. *Einstein's Generation. The Origins of the Relativity Revolution*. Chicago, IL: University of Chicago Press, 2008, x+494 pp. "Focusing on the origins, rise, and emergence of special relativity from 1911 to the 1970s, this book deepens our understanding of the relation between the material and the conceptual dimensions of relativity physics". See the review by Pierre Kerszberg in *Mathematical Reviews* 2827691 (**2012e**:83002). (JA) #39.4.156

Suslina, T.A. *See* #39.4.154.

Szász, Domokos. John von Neumann, the mathematician. *The Mathematical Intelligencer* **33** (2) (2011), 42–51. On the life and mathematics of John von Neumann. See the review by Jim Mackenzie in *Zentralblatt MATH* 1228.01050. (DJM) #39.4.157

Tabachnikov, Serge. *See* #39.4.123.

Tang, Kwok Chun. *See* #39.4.161.

Teschl, Gerald. *See* #39.4.104.

Tobies, Renate. *Iris Runge. A Life at the Crossroads of Mathematics, Science and Industry. With a Foreword by Helmut Neunzert. Revised by the Author and Transl. from the German by Valentine A. Pakis* (*Science Networks. Historical Studies* **43**). Berlin: Springer, 2012, xxvii+442 pp. This book is the English version of the biography of Iris Runge (1888–1966), the daughter of Carl Runge (1856–1927), published originally in German as Tobies, R. "*Morgen möchte ich wieder 100 herrliche Sachen ausrechnen*". *Iris Runge at Osram and Telefunken* (*Boethius. Texte und Abhandlungen zur Geschichte der Mathematik und der Naturwissenschaften* **61**). Stuttgart: Franz Steiner Verlag, 2010 (Zbl 1194.01148). See the review by Reinhard Siegmund-Schultze in *Zentralblatt MATH* 1236.01015. (LM) #39.4.158

Vollmar, Roland. Konrad Zuses Universum [Konrad Zuse's universe]. *Abhandlungen der Braunschweigischen Wissenschaftlichen Gesellschaft* **63** (2011), 63–83. This article emphasizes the scientific work of Konrad Zuse (1910–1995) outside of the pioneering computer development for which he is well known. (DJM) #39.4.159

Welty, Ivan. Frege on indirect proof. *History and Philosophy of Logic* **32** (3) (2011), 283–290. The author argues that Frege's concept of indirect proof "may be best understood" as a

version of its modern form viewed from a higher-order perspective, rather than as a defective interpretation hampered by the lack of a notion of logical consequence. (KP) #39.4.160

Willems, Harrie. *See* #39.4.118.

Wong, Ngai Ying; and Tang, Kwok Chun. Mathematics education in Hong Kong under colonial rule. *British Society for the History of Mathematics Bulletin* **27** (2) (2012), 119–125. After a short introduction to British colonial rule of Hong Kong, the article briefly highlights some features of primary and secondary mathematics education of the colony in the twentieth century. Focuses on response to the Modern Mathematics movement that began in the late 1950s. (PWH) #39.4.161

Yafaev, T.R. *See* #39.4.154.

Yau, Horng-Tzer. The work of Cédric Villani, in #39.4.2, pp. 87–98. #39.4.162

Young, Alfred. *See* #39.4.112.

See also #39.4.66; #39.4.81; and #39.4.91.

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